CONTENTS

Vol. XXIII, Issue Nos. 103–104, 1957

Journal of Polymer Science

ISSUE NO. 103, JANUARY

H. MARK: Foreword 1

SECTION I. GENERAL BEHAVIOR OF POLYMERS IN SOLUTION

C. BOOTH, G. GEE, and G. R. WILLIAMSON: Departures from Random Mixing in Polymer-Liquid Systems 3
Discussion: H. Tompa, G. Gee 7
A. LIENHART, M. WIDEMANN, et A. BANDERET: De l'influence d'une petite modification structurale apportée à une semimacromolécule sur les propriétés thermodynamiques de ses solutions 9
W. R. MOORE, J. A. EPSTEIN, A. M. BROWN, and B. M. TIDSWELL: Cellulose Derivative-Solvent Interaction 23
V. A. KARGIN: Sorptive Properties of Glasslike Polymers 47
A. J. STAVERMAN, D. T. F. PALS, and CH. A. KRUISSINK: Osmometry with Membranes Permeable to Solute 57
Discussion: O. Kedem, A. J. Staverman 68
D. T. F. PALS and A. J. STAVERMAN: An Osmometer with an Ideal Semipermeable Boundary 69
Discussion: B. Hargitay, A. J. Staverman 73
K. UEBERREITER and F. ASMUSSEN: Velocity of Dissolution of Polystyrene 75
Discussion: B. Hargitay, K. Ueberreiter, M. Daune 81
P. REMPP: Viscosités des solutions de molécules à chaîne courte 83
J. CRANE and D. SCHIFFER: A Case of Antithixotropy 93
Discussion: L. Valentine, M. Reiner 97
YASUNORI NISHIJIMA and GERALD OSTER: Fiber Formation from Concentrated Polymer Solutions and the Possible Origin of Long-Range Periodicity in Synthetic Fibers 99
ESKIL HULTIN: A Rational Measure for the Heterogeneity of Polymeric Homologous Substances 103
M. DAUNE et L. FREUND: Etude de la polydispersité au moyen de la diffusion brownienne 115
ROGER CERF: La macromolécule en chaîne dans un champ hydrodynamique. Théorie générale. Propriétés dynamo-optiques 125
Discussion: J. J. Hermans, R. Cerf 150
VICTOR N. TSVETKOV: Dynamic Flow Birefringence, Optical Anisotropy, and Shape of Macromolecules in Solutions 151
Discussion: A. Peterlin, V. N. Tsvetkov, R. Cerf 165
JOSEPH LERAY: Etude expérimentale de l'effet Maxwell présenté par les solutions de macromolécules en chaîne 167
Discussion: V. Desreux, R. Cerf 180

H. Janeschitz-Kriegl: On the Technique of Measuring Flow Birefringence ... 181
Discussion: H. Janeschitz-Kriegl ... 188
Anton Peterlin: Light Scattering by Linear Macromolecules Oriented in Laminar Flow. II. Determination of the Main Gyration Radii ... 189
Discussion: C. Wippler, A. Peterlin ... 197
C. Wippler: Diffusion de la lumière par des solutions de molécules en chaînes soumises à un champ électrique ... 199
L. K. H. van Beek and J. J. Hermans: Dielectric Relaxation in Dilute Solutions of Polar Chain Molecules ... 211
Discussion: J. J. Hermans ... 221
J. Marchal et H. Benoit: Comparaison entre les résultats fournis par la détermination des dimensions et du moment électrique moyen des chaînes macromoléculaires ... 223
L. de Brouckere, D. Buess, et L. K. H. van Beek: Le comportement diélectrique des polymères en solutions diluées ... 233
Discussion: J. J. Hermans, L. de Brouckère ... 240
M. Mandel: Etude de l'interaction solvant-macromolécule par la constante diélectrique statique des solutions diluées de hauts polymères ... 241
Herbert Morawetz: Group Association Equilibria in Isolated Polymer Coils ... 247
Discussion: A. Dobry-Duclaux, G. Smets, H. Morawetz ... 258
A. Silberberg, J. Eliassaf, and A. Katchalsky: Temperature-Dependence of Light Scattering and Intrinsic Viscosity of Hydrogen Bonding Polymers ... 259
Discussion: J. W. Breitenbach, A. Silberberg, G. Smets ... 282
Eligia Turska et Marceli Łaczkowski: Sur la coacervation des polyamides ... 285
Discussion: C. Mussa, E. Turska ... 295
L. Valentine: Interaction of Polyamides with Solvents. I. A Preliminary Survey of the Swelling of Crosslinked Nylon 66 in Various Types of Solvents ... 297
Discussion: A. Charlesby, L. Valentine, M. Magat ... 313
R. M. Barrer, J. A. Barrie, and J. Slater: Sorption and Diffusion in Ethyl Cellulose. Part I. History-Dependence of Sorption Isotherms and Permeation Rates ... 315
R. M. Barrer and J. A. Barrie: Sorption and Diffusion in Ethyl Cellulose. Part II. Quantitative Examination of Settled Isotherms and Permeation Rates ... 331
P. T. Mora: Solution Behavior of Chemically Synthesized Polyglucoses ... 345
Discussion: A. Katchalsky, P. T. Mora ... 354
Peter Alexander and Arthur Charlesby: Effect of X-Rays and γ-Rays on Synthetic Polymers in Aqueous Solution ... 355
Discussion: M. Magat, A. Charlesby, A. Chapiro, V. Desreux ... 375
Adolphe Chapiro: Gonflement des copolymères greffés d'acrylonitrile sur le polyéthylène dans le dimethylformamide ... 377
Discussion: A. Banderet, A. Chapiro, G. Smets ... 386
I. Eliezer and H. J. G. Hayman: Mean Square Length and Mean Square Radius of Gyration of 1,4′-Polysaccharides and of Polybutadienes ... 387
Lecture given but not received for publication:
C. Watters, A. Horth, and M. Rinfert: Heat of Mixing and Partial Specific Volume of Macromolecules in Dilute Solution

SECTION II. General Behavior of Biocolloids and Polyelectrolytes in Solution

Robert MacFarlane, Jr., and Raymond M. Fuoss: Polyelectrolytes. XII. Conductance of Partially Quaternized Poly-4-vinylpyridine in Methanol–Butan-2-one Mixtures 403
Discussion: M. Morawetz, R. M. Fuoss, J. J. Hermans, A. Dobry-Duclaux 419
Fumio Oosawa: A Simple Theory of Thermodynamic Properties of Polyelectrolyte Solutions 421
Shneior Lifson: On the Additivity of the Configurational and Electrostatic Properties of Polyelectrolytes in Solution 431
I. Michaeli, J. Th. G. Overbeek, and M. J. Voorn: Phase Separation of Polyelectrolyte Solutions 443
Harry P. Gregor and Michael Frederick: Potentiometric Titration of Polyacrylic and Polymethacrylic Acids with Alkali Metal and Quaternary Ammonium Bases 451
Harry P. Gregor, Daniel H. Gold, and Michael Frederick: Viscometric and Conductometric Titrations of Polymethacrylic Acid with Alkali Metal and Quaternary Ammonium Bases 467
Ikumi Kagawa and Harry P. Gregor: Theory of the Effect of Counterion Size upon Titration Behavior of Polycarboxylic Acids 477
Discussion: M. Breuer, J. R. Bourdais 483
J. Bourdais et A. Dobry-Duclaux: Sur l'activité des ions dans les solutions colloïdales. III. Variation du coefficient d'activité des ions compensateurs en fonction de la concentration 485
Discussion: H. Morawetz, A. Dobry-Duclaux 496
A. Dobry-Duclaux: Sur la notion de l'activité dans les solutions colloïdales 499

Issue No. 104, February

SECTION II. General Behavior of Biocolloids and Polyelectrolytes in Solution (*continued*)

A. Katchalsky, J. Mazur, and P. Spitnik: Polybase Properties of Polyvinylamine 513
Discussion: H. Morawetz, A. Katchalsky, J. J. Hermans, A. Dobry-Duclaux 530
Turner Alfrey, Jr., and S. H. Pinner: Preparation and Titration of Amphoteric Polyelectrolytes 533
Terrell L. Hill: Some Statistical Problems Concerning Linear Macromolecules 549
Discussion: S. Lifson, H. J. G. Hayman 561
Guido Saini and Luigi Trossarelli: Light Scattering of Polyphosphates of High Molecular Weight 563
M. Kryszewski: L'influence de l'acide polyméthacrylique sur la réfraction moléculaire des électrolytes forts et concentrés 575
H. Eisenberg: Viscosity Behavior of Polyelectrolyte Solutions at Low and Medium Rates of Shear 579
Discussion: A. Kepes, J. A. V. Butler, H. Eisenberg, J. J. Hermans 595
J. B. Donnet et P. Marguier: Etude expérimentale de l'effet électrovisqueux présenté par un polyélectrolyte rigide 601
Discussion: A. Dobry-Duclaux 616
Masakazu Matsumoto and Tamotsu Eguchi: Intrinsic Viscosity of Aminoacetalized Polyvinyl Alcohol Sulfate in 1/10 *N* Potassium Sulfate Solution 617

L.-G. Allgén and Siw Roswall: A Dielectric Study of Sodium Alginate in Aqueous Solution 635
Toshizo Isemura, Kozo Hamaguchi, and Shoichi Ikeda: Surface Chemistry of Synthetic Electrolytic Polypeptides 651
Discussion: I. Miller, T. Isemura 664
J. Jaffe et R. De Coene: Etude de la morphologie de macromolécules par mesures de pressions superficielles 665
I. Michaeli and A. Katchalsky: Potentiometric Titration of Polyelectrolyte Gels 683
P. Hirsch-Ayalon: Impregnated Membranes with Specific Permeabilities for Different Ions 697
Discussion: A. J. Staverman, P. Hirsch-Ayalon, M. Zwick 703
Lecture given but not received for publication:
I. R. Miller and D. C. Grahame: Interaction of Ionized Polyelectrolytes with Polarized Mercury-Water Interfaces

SECTION III. Special Polymeric Systems in Solution

K. V. Shooter and J. A. V. Butler: Physical Fractionation of DNA by Centrifugation and Other Processes 705
Discussion: A. R. Mathieson, V. Desreux, K. V. Shooter 711
A. Oth et V. Desreux: Solubilité et dissociation d'une désoxyribonucléoprotéine 713
Discussion: J. A. V. Butler, V. Desreux 715
E. Barbu, J. Basset, M. Joly, et R. Wahl: Sur le comportement physico-chimique des solutions d'acide désoxyribonucléique du phage D_4 de *Salmonella enteritidis* 717
Discussion: J.-B. Donnet, R. Wahl, V. Desreux 738
J. Pouyet et G. Weill: Etudes physico-chimiques sur deux catégories d'acides désoxyribonucléiques 739
Discussion: A. R. Mathieson, J. Pouyet 745
A. R. Mathieson and Sheila Matty: Influence of pH and Ionic Strength on Size, Shape, and Electric Charge of the Deoxyribonucleic Acid Molecule 747
Discussion: R. Cerf, A. R. Mathieson 764
R. A. Cox and A. R. Peacocke: Application of the Titration Method to Studies on the Denaturation of Sodium Deoxyribonucleate 765
Discussion: A. R. Mathieson, A. R. Peacocke 778
General Discussion on the Nucleic Acid Titration Papers: H. Eisenberg, J.-B. Donnet, A. R. Mathieson, R. Wahl 781
D. S. Feingold and M. Gehatia: The Structure and Properties of Levan, a Polymer of D-Fructose Produced by Cultures and Cell-Free Extracts of *Aerobacter levanicum* 783
K. Freudenberg: Hydrolysis and Optical Rotation of Cellulose, Starch, and Cycloglucans 791
M. Samec: Des études physico-chimiques les plus récentes sur l'amidon 801
Hannes Sihtola, Ermo Kaila, and Lauri Laamanen: Cuprietylenediamine and Cuprammonium Hydroxide as Solvents in Molecular Fractionation of Cellulose 809
A. E. Goodban and H. S. Owens: Chromatographic Fractionation of Sugar Beet Araban 825
H. U. Usmanov: Physical Chemistry of Native Cellulose 831
Aleksander Nowakowski: Le mécanisme du gonflement de la cellulose régenerée 839

JUNZO NOGUCHI, TADAO HAYAKAWA, and MITUO EBATA: Reversible Heat Coagulation of Some Water-Soluble Amino Acid Copolymers 843
PAUL DOTY, A. WADA, JEN TSI YANG, and E. R. BLOUT: Polypeptides. VIII. Molecular Configurations of Poly-L-glutamic Acid in Water-Dioxane Solution 851
M. CHAMPAGNE: Action des pH acides sur la sérum albumine bovine en solution 863
Discussion: E. Shafrir, M. Champagne, E. Katchalsky 869
ALBERT WASSERMANN: Viscometric Investigation into the Influence of pH and Ionic Strength on Molecular Shape of a Structural Muscle Protein 871
CARLO MUSSA: An Estimate of the Molecular Weights of Polythene 877
Q. A. TREMENTOZZI: Effect of Long-Chain Branching on Some Solution Properties of Polyethylene 887
W. K. W. CHEN, R. B. MESROBIAN, D. S. BALLANTINE, D. J. METZ, and A. GLINES: Studies on Graft Copolymers Derived by Ionizing Radiation 903
Discussion: A. Chapiro 913
M. MULLIER and G. SMETS: Polymers and Group Interaction. IV. Hofmann Reaction on Polyvinylamides 915
J. MOENS and G. SMETS: Alkaline and Acid Hydrolysis of Polyvinylamides 931
Discussion; H. Morawetz, G. Smets 948
J. W. BREITENBACH: Polymerization and Polymers of *N*-Vinylpyrrolidone 949
A. KATCHALSKY, K. ROSENHECK, and B. ALTMANN: Poly-2- and Poly-4-vinylpiperidine 955
AUTHOR INDEX, Volume XXIII 967
SUBJECT INDEX, Volume XXIII 970

AUTHOR INDEX, VOLUME XXIII

Page numbers in *italics* refer to discussion participation

Alexander, P., and Charlesby, A.: Effect of x-rays and γ-rays on synthetic polymers in aqueous solution, 355

Alfrey, T., Jr., and Pinner, S. H.: Preparation and titration of amphoteric polyelectrolytes, 533

Allgén, L.-G., and Roswall, S.: A dielectric study of sodium alginate in aqueous solution, 635

Altmann, B.: see Katchalsky, A.

Asmussen, F.: see Ueberreiter, K.

Ballantine, D. S.: see Chen, W. K. W.

Banderet, A.: *386*

——: see Lienhart, A.

Barbu, E., Basset, J., Joly, M., et Wahl, R.: Sur le comportement physicochimique des solutions d'acide désoxyribonucléique du phage D_4 de *Salmonella enteritidis*, 717

Barrer, R. M., and Barrie, J. A.: Sorption and diffusion in ethyl cellulose. Part II. Quantitative examination of settled isotherms and permeation rates, 331

——, ——, and Slater, J.: Sorption and diffusion in ethyl cellulose. Part I. History-dependence of sorption isotherms and permeation rates, 315

Barrie, J. A.: see Barrer, R. M.

Basset, J.: See Barbu, E.

Beek, L. K. H. van, and Hermans, J. J.: Dielectric relaxation in dilute solutions of polar chain molecules, 211

——: see Brouckère, L. de.

Benoît, H.: see Marchal, J.

Blout, E. R.: see Doty, P.

Booth, C., Gee, G., and Williamson, G. R.: Departures from random mixing in polymer-liquid systems, 3

Bourdais, J., et Dobry-Duclaux, A.: Sur l'activité des ions dans les solutions colloïdales. III. Variation du coefficient d'activité des ions compensateurs en fonction de la concentration, 485

——: *484*

Breitenbach, J. W.: Polymerization and polymers of *N*-vinylpyrrolidone, 949

——: *282*

Breuer, M.: *483*

Brouckère, L. de, Buess, D., et Beek, L. K. H. van: Le comportement diélectrique des polymères en solutions diluées, 233

——: *240*

Brown, A. M.: see Moore, W. R.

Buess, D.: see Brouckère, L. de.

Butler, J. A. V.: *597, 715*

——: see Shooter, K. V.

Cerf, R.: La macromolécule en chaîne dans un champ hydrodynamique. Théorie générale. Propriétés dynamo-optiques, 125

——: *150, 165, 180, 764*

Champagne, M.: Action des pH acides sur la sérum albumine bovine en solution, 863

——: *869*

Chapiro, A.: Gonflement des copolymères greffes d'acrylonitrile sur le polyéthylène dans le dimethylformamide, 377

——: *375, 386, 913*

Charlesby, A.: *313, 375*

——: see Alexander, P.

Chen, W. K. W., Mesrobian, R. B., Ballantine, D. S., Metz, D. J., and Glines, A.: Studies on graft copolymers derived by ionizing radiation, 903

Cox, R. A., and Peacocke, A. R.: Application of the titration method to studies on the denaturation of sodium deoxyribonucleate, 765

Crane, J., and Schiffer, D.: A case of antithixotropy, 93

Daune, M., et Freund, L.: Etude de la polydispersité au moyen de la diffusion brownienne, 115

——: *81*

De Coene, R.: see Jaffe, J.

Desreux, V.: *180, 375, 712, 716, 738*

——: see Oth, A.

Dobry-Duclaux, A.: Sur la notion de l'activité dans les solutions colloïdales, 499

——: *258, 419, 496, 532, 616*

——: see Bourdais, J.

Donnet, J. B., et Marguier, P.: Etude expérimentale de l'effet électrovisqueux présenté par un polyélectrolyte rigide, 601

——: *738, 781*

Doty, P., Wada, A., Yang, J. T., and Blout, E. R.: Polypeptides. VIII. Molecular configurations of poly-L-glutamic acid in water-dioxane solution, 851

Ebata, M.: see Noguchi, J.

Eguchi, T.: see Matsumoto, M.

Eisenberg, H.: Viscosity behavior of polyelectrolyte solutions at low and medium rates of shear, 579

——: *597, 781*

Eliassaf, J.: see Silberberg, A.

Eliezer, I., and Hayman, H. J. G.: Mean square length and mean square radius of gyration of 1,4′-polysaccharides and of polybutadienes, 387

Epstein, J. A.: see Moore, W. R.

Feingold, D. S., and Gehatia, M.: The structure and properties of levan, a polymer of D-fructose produced by cultures and cell-free extracts of *Aerobacter levanicum*, 783

Frederick, M.: see Gregor, H. P.
Freund, L.: see Daune, M.
Freudenberg, K.: Hydrolysis and optical rotation of cellulose, starch, and cycloglucans, 791
Fuoss, R. M.: *419, 420*
——: see MacFarlane, R., Jr.
Gee, G.: *8*
——: see Booth, C.
Gehatia, M.: see Feingold, D. S.
Glines, A.: see Chen, W. K. W.
Gold, D. H.: see Gregor, H. P.
Goodban, A. E., and Owens, H. S.: Chromatographic fractionation of sugar beet araban, 825
Gregor, H. P., and Frederick, M.: Potentiometric titration of polyacrylic and polymethacrylic acids with alkali metal and quaternary ammonium bases, 451
——, Gold, D. H., and Frederick, M.: Viscometric and conductometric titrations of polymethacrylic acid with alkali metal and quaternary ammonium bases, 467
——: see Kagawa, I.
Hamaguchi, K.: see Isemura, T.
Hargitay, B.: *73, 81*
Hayakawa, T.: see Noguchi, J.
Hayman, H. J. G.: *562*
——: see Eliezer, I.
Hermans, J. J.: *150, 221, 240, 419, 532, 598*
——: see Beek, L. K. H. van
Hill, T. L.: Some statistical problems concerning linear macromolecules, 549
Hirsch-Ayalon, P.: Impregnated membranes with specific permeabilities for different ions, 697
——: *704*
Horawetz, H.: *530*
Hultin, E.: A rational measure for the heterogeneity of polymeric homologous substances, 103
Ikeda, S.: see Isemura, T.
Isemura, T., Hamaguchi, K., and Ikeda, S.: Surface chemistry of synthetic electrolytic polypeptides, 651
——: *664*
Jaffe, J., et De Coene, R.: Etude de la morphologie de macromolécules par mesures de pressions superficielles, 665
Janeschitz-Kriegl, H.: On the technique of measuring flow birefringence, 181
——: *188*
Joly, M.: see Barbu, E.
Kagawa, I., and Gregor, H. P.: Theory of the effect of counterion size upon titration behavior of polycarboxylic acids, 477
Kaila, E.: see Sihtola, H.
Kargin, V. A.: Sorptive properties of glasslike polymers, 47
Katchalsky, A., Mazur, J., and Spitnik, P.: Polybase properties of polyvinylamine, 513
——, Rosenheck, K., and Altmann, B.: Poly-2- and poly-4-vinylpiperidine, 955
——: *354, 531*
——: see Michaeli, I.; Silberberg, A.
Katchalsky, E.: *869*
Kedem, O.: *68*
Kepes, A.: *595*
Kruissink, Ch. A.: see Staverman, A. J.
Kryszewski, M.: L'influence de l'acide polyméthacrylique sur la réfraction moléculaire des électrolytes forts et concentrés, 575
Laamanen, L.: see Sihtola, H.
Łaczkowski, M.: see Turska, E.
Leray, J.: Etude expérimentale de l'effet Maxwell présenté par les solutions de macromolécules en chaîne, 167
Lienhart, A., Widemann, M., et Banderet, A.: De l'influence d'une petite modification structurale apportée à une semi-macromolécule sur les propriétés thermodynamiques de ses solutions, 9
Lifson, S.: On the additivity of the configurational and electrostatic properties of polyelectrolytes in solution, 431
——: *561*
MacFarlane, R., Jr., and Fuoss, R. M.: Polyelectrolytes. XII. Conductance of partially quaternized poly-4-vinylpyridine in methanol-butan-2-one mixtures, 403
Magat, M.: *314, 375*
Mandel, M.: Etude de l'interaction solvant-macromolécule par la constante diélectrique statique des solutions diluées de hauts polymères, 241
Marchal, J., et Benoît, H.: Comparaison entre les résultats fournis par la détermination des dimensions et du moment électrique moyen des chaînes macromoléculaires, 223
Marguier, P.: see Donnet, J. B.
Mathieson, A. R., and Matty, S.: Influence of pH and ionic strength on size, shape, and electric charge of the deoxyribonucleic acid molecule, 747
——: *711, 745, 764, 778, 781*
Matsumoto, M., and Eguchi, T.: Intrinsic viscosity of aminoacetalized polyvinyl alcohol sulfate in 1/10 *N* potassium sulfate solution, 617
Matty, S.: see Mathieson, A. R.
Mazur, J.: see Katchalsky, A.
Mesrobian, R. B.: see Chen, W. K. W.
Metz, D. J.: see Chen, W. K. W.
Michaeli, I., and Katchalsky, A.: Potentiometric titration of polyelectrolyte gels, 683
——, Overbeek, J. Th. G., and Voorn, M. J.: Phase separation of polyelectrolyte solutions, 443
Miller, I.: *664*
Moens, J., and Smets, G.: Alkaline and acid hydrolysis of polyvinylamides, 931
Moore, W. R., Epstein, J. A., Brown, A. M., and Tidswell, B. M.: Cellulose derivative-solvent interaction, 23
Mora, P. T.: Solution behavior of chemically synthesized polyglucoses, 345
——: *354*
Morawetz, H.: Group association equilibria in isolated polymer coils, 247
——: *258, 419, 496, 530, 948*

Mullier, M., and Smets, G.: Polymers and group interaction. IV. Hofmann reaction on polyvinylamides, 915
Mussa, C.: An estimate of the molecular weights of polythene, 877
——: *295*
Nishijima, Y., and Oster, G.: Fiber formation from concentrated polymer solutions and the possible origin of long-range periodicity in synthetic fibers, 99
Noguchi, J., Hayakawa, T., and Ebata, M.: Reversible heat coagulation of some water-soluble amino acid copolymers, 843
Nowakowski, A.: Le mécanisme du gonflement de la cellulose régenerée, 839
Oosawa, F.: A simple theory of thermodynamic properties of polyelectrolyte solutions, 421
Oster, G.: see Nishijima, Y.
Oth, A., et Desreux, V.: Solubilité et dissociation d'une désoxyribonucléoprotéine, 713
Overbeek, J. Th. G.: see Michaeli, I.
Owens, H. S.: see Goodban, A. E.
Pals, D. T. F., and Staverman, A. J.: An osmometer with an ideal semipermeable boundary, 69
——: see Staverman, A. J.
Peacocke, A. R.: *778*
——: see Cox, R. A.
Peterlin, A.: Light scattering by linear macromolecules oriented in laminar flow. II. Determination of the main gyration radii, 189
——: *165*, *197*
Pinner, S. H.: see Alfrey, T., Jr.
Pouyet, J., et Weill, G.: Études physico-chimiques sur deux catégories d'acides désoxyribonucléiques, 739
——: *745*
Reiner, M.: *97*
Rempp, P.: Viscosités des solutions de molécules à chaîne courte, 83
Rosenheck, K.: see Katchalsky, A.
Roswall, S.: see Allgén, L.-G.
Saini, G., and Trossarelli, L.: Light scattering of polyphosphates of high molecular weight, 563
Samec, M.: Des études physico-chimiques les plus récentes sur l'amidon, 801
Schiffer, D.: see Crane, J.
Shafrir, E.: *869*
Shooter, K. V., and Butler, J. A. V.: Physical fractionation of DNA by centrifugation and other processes, 705
——: *712*
Sihtola, H., Kaila, E., and Laamanen, L.: Cupriethylenediamine and cuprammonium hydroxide as solvents in molecular fractionation of cellulose, 809
Silberberg, A., Eliassaf, J., and Katchalsky, A.: Temperature-dependence of light scattering and intrinsic viscosity of hydrogen bonding polymers, 259
——: *283*
Slater, J.: see Barrer, R. M.
Smets, G.: *258*, *283*, *386*, *948*
——: see Moens, J.; Mullier, M.
Spitnik, P.: see Katchalsky, A.
Staverman, A. J., Pals, D. T. F., and Kruissink, Ch. A.: Osmometry with membranes permeable to solute, 57
——: *68*, *73*, *703*
——: see Pals, D. T. F.
Tidswell, B. M.: see Moore, W. R.
Tompa, H.: *7*
Trementozzi, Q. A.: Effect of long-chain branching on some solution properties of polyethylene, 887
Trossarelli, L.: see Saini, G.
Tsvetkov, V. N.: Dynamic flow birefringence, optical anisotropy, and shape of macromolecules in solutions, 151
——: *165*, *166*
Turska, E., et Łaczkowski, M.: Sur la coacervation des polyamides, 285
——: *295*
Ueberreiter, K., and Asmussen, F.: Velocity of dissolution of polystyrene, 75
——: *81*
Usmanov, H. U.: Physical chemistry of native cellulose, 831
Valentine, L.: Interaction of polyamides with solvents. I. A preliminary survey of the swelling of crosslinked nylon 66 in various types of solvents, 297
——: *97*, *314*
Voorn, M. J.: see Michaeli, I.
Wada, A.: see Doty, P.
Wahl, R.: *738*, *781*
——: see Barbu, E.
Wassermann, A.: Viscometric investigation into the influence of pH and ionic strength on molecular shape of a structural muscle protein, 871
Weill, G.: see Pouyet, J.
Widemann, M.: see Lienhart, A.
Williamson, G. R.: see Booth, C.
Wippler, C.: Diffusion de la lumière par des solutions de molécules en chaînes soumises à un champ électrique, 199
——: *197*
Yang, J. T.: see Doty, P.
Zwick, M.: *704*

SUBJECT INDEX, VOLUME XXIII

Acrylonitrile, swelling of graft copolymers of, 377
Amino acid copolymers, reversible heat coagulation, 843
Antithixotropy, 93
Araban, chromatographic fractionation, 825
Cellulose, hydrolysis and optical rotation, 791
  interaction of derivatives and solvent, 23
  mechanism of swelling, 839
  molecular fractionation, 809
  physical chemistry, 831
Chain molecules, dimensions and electric moment, 223
  dynamic-optical properties, 125
  light diffusion, 199
  Maxwell effect, 167
  polar, and dielectric relaxation, 211
Colloidal solutions, coefficients of activity, 485, 499
Configurational properties, polyelectrolytes, 431
Counterions, activity, 485
  effect on titration behavior of polycarboxylic acids, 477
Cycloglucans, hydrolysis and optical rotation, 791
Deoxyribonucleic acid, 739
  influence of pH and ionic strength, 747
  from phage D_4, 717
  physical fractionation, 705
Deoxyribonucleic proteins, solubility and dissociation, 716
Dielectric behavior, polymers in solution, 233
Dielectric constant, and solvent-polymer interaction, 241
Dielectric relaxation, of polar chain molecules, 211
Dynamic flow birefringence, 151
Dynamic-optical properties, chain molecules, 125
Electrolytes, influence of polymethacrylic acid on refraction of, 575
Electrostatic properties, polyelectrolytes, 431
Electroviscous effect, polyelectrolytes, 601
Ethyl cellulose, sorption and diffusion, 315, 331
Fibers, from concentrated polymer solutions, 99
  synthetic, long-range periodicity, 99
Flow birefringence, measurement, 181
Glasslike polymers, sorptive properties, 47
Graft copolymers, from ionizing radiation, 903
Group association equilibria, in isolated polymer coils, 247
Hydrodynamic behavior, chain molecules, 125
Hydrogen bonding polymers, light scattering and intrinsic viscosity, 259
Hydrolysis, alkaline and acid, of polyvinylamides, 931
Intrinsic viscosity, hydrogen bonding polymers, 259
Levan, structure and properties, 783
Light scattering, chain molecules, 199
  hydrogen bonding polymers, 259
  by linear macromolecules, 189
  polyphosphates, 563
Linear macromolecules, some statistical problems of, 549
Liquid-polymer systems, random mixing, 3
Maxwell effect, chain molecules, 167
Membranes, impregnated, with specific permeabilities, 697
Molecular weight, polythene, 877
Morphology, by surface pressure measurements, 665
Nylon 66, swelling, 297
Optical anisotropy, 151
Osmometer, with ideal semipermeable boundary, 69
Osmometry, with membranes permeable to solute, 57
Permeation rates, ethyl cellulose, 315, 331
Phase separation, polyelectrolytes, 443
Polyacrylic acid, potentiometric titration, 451
Polyamides, coacervation, 285
  interaction with solvents, 297
Polybutadienes, mean square length and mean square radius of gyration, 387
Polycarboxylic acids, titration behavior, 477
Polydispersion, and Brownian diffusion, 115
Polyelectrolytes, 403
  additivity of configurational and electrostatic properties, 431
  amphoteric, 530
  and the electroviscous effect, 601
  gels, potentiometric titration of, 683
  phase separation, 443
  thermodynamic properties, 421
  viscosity behavior, 579
Polyethylene, effect of long-chain branching on, 887
  and swelling of graft copolymers of acrylonitrile, 377
Polyglucoses, solution behavior, 345
Poly-L-glutamic acid, molecular configurations, 851
Polymeric homologous substances, heterogeneity, 103
Polymer-liquid systems, random mixing, 3
Polymers, synthetic effect of x- and γ-rays, 355
Polymethacrylic acid, influence on refraction of electrolytes, 575

potentiometric titration, 451
viscometric and conductometric titrations, 467
Polypeptides, 851
synthetic electrolytic, surface chemistry of, 651
Polyphosphates, light scattering, 563
1,4′-Polysaccharides, mean square length and mean square radius of gyration, 387
Polystyrene, velocity of dissolution, 75
Polythene, molecular weights, 877
Polyvinyl alcohol sulfate aminoacetalized intrinsic viscosity of, 617
Polyvinylamides, alkaline and acid hydrolysis, 931
Hofmann reaction, 915
Polyvinylamine, polybase properties, 513
Poly-2 and Poly-4-vinylpiperidine, 955
Poly-4-vinylpyridine, conductance, 403
Protein, muscle, molecular shape, 871
Radiation, graft copolymer formation, 903
Serum albumin, action of acid pH on, 863
Shape of macromolecules, 151
Sodium alginate, dielectric study, 635
Sodium deoxyribonucleate, denaturation, 765
Sorption, glasslike polymers, 47
Starch, hydrolysis and optical rotation, 791
physico-chemical studies, 801
Structure, influence of modifications on thermodynamic properties, 9
Surface pressure measurements, for morphology of macromolecules, 665
Thermodynamic properties, influence of structural modifications, 9
polyelectrolytes, 421
N-Vinylpyrrolidone, 949
Viscometry, for investigation of structural muscle protein, 871
Viscosity, intrinsic, of aminoacetalized polyvinyl alcohol sulfate, 617
polyelectrolyte solutions, 579
short-chain molecules, 83
X-rays, effect on synthetic polymers, 355